

DRAFT AMENDMENT

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Claim 21 (Currently Amended): A method for determining the two-dimensional coordinates of sequential cross-sectional slices of a fiber bundle which may be used to form a chip or a micro-array comprising:

~~position of each fiber unit in each slice that comprises a fiber alignment, the method comprising the steps of:~~

- (a) producing a series of sequential cross-sectional slices of a bundle of linearly aligned fibers, wherein each fiber in the bundle contains a probe and/or a marker, and the bundle contains two or more marker fibers, wherein each sequential slice comprises multiple fiber units produced from the cross-sectional slicing of individual fibers in the bundle and said fiber units are bound or immobilized to one another
~~cutting sequentially a fiber alignment obtained by binding and immobilizing fibers, to obtain a series of fiber alignment slices $S(1)$, $S(2)$, ... $S(h)$, ... $S(m)$;~~
- (b) ~~selecting any given~~ determining the two-dimensional coordinates of each fiber unit within a fiber alignment slice $S(h)$ using the coordinates of the fiber units formed by said two or more marker fibers as coordinate reference points from m number of slices, and determining two-dimensional coordinates for each fiber unit contained in said slice $S(h)$, based on the coordinate reference points in said slice $S(h)$;
- (c) determining the two-dimensional coordinates of the each fiber units corresponding to those in fiber alignment slice $S(h)$ which are in an adjacent or sequential fiber alignment slice of said fiber bundle, based on the coordinate data obtained for fiber alignment slice $S(h)$ in step (b) and based

on the positions of the coordinate reference points in the adjacent or sequential fiber alignment slice

~~contained in slice S(i) located adjacent to said slice S(h), based on the coordinate data of slice S(h) obtained in step (b) and the coordinate reference points in said slice S(i); and~~

(d) repeating steps (b) and (c) to determine the two-dimensional coordinates of each the fiber units in one or more successive or and adjacent fiber alignment slices of said fiber bundle

~~, S(j), S(k), ... S(m), that comprise a fiber alignment, and wherein each slice comprises fiber units and reference points.~~